

Application Serial No. 10/759,570

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AMENDMENTS TO THE CLAIMS

Please amend the claims of the instant application as follows:

1-3. (Canceled)

4. (Withdrawn) A solid state imaging apparatus, comprising:

a plurality of pixels two-dimensionally arranged in a vertical direction and a horizontal direction wherein each of the plurality of pixels has a color filter having a different color from color filters of vertically or horizontally adjacent pixels; and

a signal output circuit configured to perform one of two types of operations,

wherein the signal output circuit includes:

a first shift register for sequentially outputting selection signals, which drive each pixel, to all of the plurality of the pixels either in a vertical or a horizontal direction, and

a second shift register for continuously outputting the selection signals to some of the plurality of pixels having color filters of the same color either in a vertical or a horizontal direction, and

wherein each of the selection signals of the first shift register and each of the selection signals of the second shift register are output to a corresponding pixel included in a pixel group arranged in the same direction as the first and second shift registers, such that all pixels in the pixel group receive a selection signal from the first shift register and the second shift register.

5. (Currently amended) A solid state imaging apparatus, comprising:

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a plurality of pixels two-dimensionally arranged in a vertical direction and a horizontal direction wherein each of the plurality of pixels has a color filter having a different color from color filters of vertically or horizontally adjacent pixels; and

a signal output circuit configured to perform one of two types of operations,

wherein the signal output circuit includes:

a shift register for sequentially outputting selection signals, which drive each pixel, to all of the plurality of pixels either in a vertical or a horizontal direction, and

an operation switching circuit for outputting the selection signals from the shift register to each pixel, the operation switching circuit configured to switch between a first signal transmission method in which the selection signals are sequentially output to all pixels either in the vertical direction or the horizontal direction and a second signal transmission method in which the selection signals are continuously output to [[some]] pixels having color filters of the same color either in the vertical direction or the horizontal direction, and

wherein in both of the first and second signal transmission methods, each of the selection signals of the shift register is output via the operation switching circuit to a corresponding pixel included in [[a]] the same pixel group arranged in the same direction as the shift register, such that all pixels in the pixel group receive a selection signal from the shift register in the first signal transmission method and all pixels in the pixel group receive a selection signal from the shift register in the second signal transmission method.

6-11. (Canceled)

12. (Withdrawn) A camera comprising a solid state imaging apparatus,

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wherein the solid state imaging apparatus comprises:

a plurality of pixels two-dimensionally arranged in a vertical direction and a horizontal direction wherein each of the plurality of pixels has a color filter having a different color from color filters of vertically or horizontally adjacent pixels; and

a signal output circuit configured to perform one of two types of operations,

wherein the signal output circuit includes a first shift register for sequentially outputting selection signals, which drive each pixel, to all of the plurality of the pixels either in a vertical or a horizontal direction and a second shift register for continuously outputting the selection signals to some of the plurality of pixels having color filters of the same color either in a vertical or a horizontal direction, and

wherein each of the selection signals of the first shift register and each of the selection signals of the second shift register are output to a corresponding pixel included in a pixel group arranged in the same direction as the first and second shift registers, such that all pixels in the pixel group receive a selection signal from the first shift register and the second shift register.

13. (Cancelled)

14. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the second shift register repeats, after continuously outputting signals of the plurality of pixels having color filters of the same color, an operation which continuously outputs signals of the plurality of pixels having color filters of a different color, on a basis of each pixel mixture unit consisting of a plurality of pixels, and

the pixel mixture unit consists of 25 pixels arranged in five rows and five columns.

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15. (Previously presented) The solid state imaging apparatus of claim 5, wherein the second signal transmission method repeats, after continuously outputting signals of the plurality of pixels having color filters of the same color, an operation which continuously outputs signals of the plurality of pixels having color filters of a different color, on a basis of a pixel mixture unit consisting of a plurality of pixels, and

the pixel mixture unit consists of 25 pixels arranged in five rows and five columns.

16. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the first shift register performs a regular operation, and a second shift register performs a pixel mixture operation.

17. (Withdrawn) The solid state imaging apparatus of claim 16, wherein a static image mode is executed by the regular operation, and a moving image mode is executed by the pixel mixture operation.

18. (Previously presented) The solid state imaging apparatus of claim 5, wherein the first signal transmission method is a sequential scanning method, and the second signal transmission method is a pixel mixture scanning method.

19. (Previously presented) The solid state imaging apparatus of claim 18, wherein a static image mode is executed by the sequential scanning method, and a moving image mode is executed by the pixel mixture scanning method.

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20. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the solid state imaging apparatus is of a MOS type, and the first and second shift registers are laid out in a same direction.

21. (Previously presented) The solid state imaging apparatus of claim 5, wherein the solid state imaging apparatus is of a MOS type, and the operation switching circuit comprises a plurality of MOS transistors selected by a plurality of gate signal lines.

22. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the first shift register sequentially outputs all the pixel signals having color filters of the different colors from one another.

23. (Previously presented) The solid state imaging apparatus of claim 5, wherein the first signal transmission method sequentially outputs all the pixel signals having color filters of the different colors from one another.

24. (Cancelled)

25. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the first shift register outputs the selection signals in number order, and the second shift register outputs the selection signals, changing the order partially.

26. (Withdrawn) The solid state imaging apparatus of claim 4, wherein

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the second shift register outputs signals of all of the pixels without thinning.

27. (Withdrawn) The solid state imaging apparatus of claim 4, wherein the solid state imaging apparatus is a MOS type solid state imaging apparatus, and MOS transistors are used in the first and second shift registers.

28. (Previously presented) The solid state imaging apparatus of claim 5, wherein in the first signal transmission method, the shift register outputs the selection signals in number order, and in the second signal transmission method, the shift register outputs the selection signals, changing the order partially.

29. (Previously presented) The solid state imaging apparatus of claim 5, wherein the second signal transmission method outputs signals of all of the pixels without thinning.

30. (Previously presented) The solid state imaging apparatus of claim 5, wherein the solid state imaging apparatus is a MOS type solid state imaging apparatus, and a MOS transistor is used in the shift register.

31. (Withdrawn) A solid state imaging apparatus, comprising:

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a plurality of pixels arranged two-dimensionally wherein each of the plurality of pixels has a color filter having a different color from color filters of adjacent pixels in a row or a column; and

a pair of shift registers for outputting selection signals, which drive each pixel, to a single line pixel group of the plurality of pixels,

wherein each of the pair of shift registers includes a scanning start terminal for switching between the two shift registers when outputting the selection signals from the shift register to the single line pixel group,

the first shift register of the pair of shift registers outputs the selection signals in number order, and

the second shift register of the pair of shift registers outputs the selection signals, changing the order partially.

32. (Withdrawn) The solid state imaging apparatus of claim 31, wherein the first shift register performs a first operation outputting all of the pixels included in the single line pixel group, and

the second shift register performs a second operation continuously outputting some of the pixels included in the single line pixel group and having color filters of a same color.

33. (Withdrawn) The solid state imaging apparatus of claim 31, wherein the second shift register outputs signals of all of the pixels without thinning.

34. (Withdrawn) The solid state imaging apparatus of claim 31, wherein

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the solid state imaging apparatus is a MOS type solid state imaging apparatus, and MOS transistors are used in the first and second shift registers.

35. (Currently amended) A solid state imaging apparatus, comprising:

a plurality of pixels arranged two-dimensionally wherein each of the plurality of pixels has a color filter having a different color from color filters of adjacent pixels in a row or a column;

a shift register for outputting selection signals, which drive each pixel, to a single line pixel group of the plurality of pixels; and

an operation switching circuit for switching between two signal transmission methods when outputting the selection signals from the shift register to the single line pixel group,

wherein in the first signal transmission method of the two signal transmission methods, the operation switching circuit outputs the selection signals without changing an order of the selection signals, and

in the second signal transmission method of the two signal transmission methods, the operation switching circuit outputs the selection signals, changing the order of the selection signals partially, and

in both of the first and second signal transmission methods, each of the selection signals of the shift register is output via the operation switching circuit to a corresponding pixel included in the same single line pixel group, such that all pixels in the single line pixel group receive a selection signal from the shift register in the first signal transmission method and all pixels in the single line pixel group receive a selection signal from the shift register in the second signal transmission method.

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36. (Currently amended) The solid state imaging apparatus of claim 35, wherein the first signal transmission method provides a first operation outputting selection signals to all of the pixels included in the single line pixel group, and the second signal transmission method provides a second operation continuously outputting selection signals to some of the pixels included in the single line pixel group and having color filters of a same color.

37. (Previously presented) The solid state imaging apparatus of claim 35, wherein the second signal transmission method outputs signals of all of the pixels included in the single line pixel group without thinning.

38. (Previously presented) The solid state imaging apparatus of claim 35, wherein the solid state imaging apparatus is a MOS type solid state imaging apparatus, and a MOS transistor is used in the shift register.